Reviewer’s report

Title: Vascular calcification on plain radiographs is associated with carotid intima media thickness, malnutrition and cardiovascular events in dialysis patients: a prospective observational study

Version: 1 Date: 3 November 2012

Reviewer: Shahrzad Ossareh

Reviewer’s report:

Major Compulsory Revisions:

1- The authors say that they "found increasing hemoglobin over a 2-year observation period in patients with VC non-progression on plain radiographs without significant differences of iron replacement and erythropoietin dose." However, figure 1 shows that Hemoglobin has significantly increased overtime in patients with progression of vascular calcification.

The other point in the mentioned sentence is that the authors have not compared the 2 groups of patients with increased and stable hemoglobin regarding iron replacement and erythropoietin dose. They just mention that "Erythropoietin dose per month was not significantly higher in patients who showed VC progression on plain radiographs and there was no significant difference of iron replacement in the enrolled dialysis patients." We need figures here for comparison of EPO dose in progressors and non-progressors. But finally how does this help? What is the logic or explanation beyond these sentences?

If the authors believe that hemoglobin increase has protected against vascular calcification, they should discuss it more in the discussion part. However, there is a sentence at the end of the abstract which says "Conditions maintaining adequate hemoglobin level maybe retard progression of VC in dialysis patients." So overall, this issue is confusing in the manuscript and should be presented and discussed precisely.

2- Please also mention and discuss the correlation between vascular calcification score and CIMT, survival, MIS and prevalence of atheromatous plaques. If any correlation is found, a multivariate analysis may help to define the best predictor of vascular calcification.

3- Please mention to the 10 components of MIS in the related section in materials and methods because you are mentioning BMI, serum albumin level, and TIBC and body fat composition and the reader becomes eager to hear about the other 6 components.

4- Please refer to reference 13 at the end of this sentence: "We used Comprehensive Malnutrition Inflammation Scores (MIS) to assess the status of malnutrition". Then you should change the place of references 12 and 13.

5- Please mention to this point that PTH, Ca and phosphorus levels were not
different in patients with and without significant vascular calcification in the results and discuss it in the discussion, referring to the following reference among the others needed in this regard.


6- Authors claim in discussion that "We also found that VC evaluation on plain radiographs by single method overlooked nearly 30% of other significant VC sites in dialysis patients". Where has this finding been mentioned in results?

7- Authors claim in discussion that "To our knowledge, this is the first observational study to compare several VC scoring methods on plain radiographs and to prove the necessity of checking several VC sites for evaluation of possible CVD." Where is the comparison of several VC scoring in the results? What we see is just comparison of MIS, CRP, HDL, ... with different VC scoring methods and not the comparison of the methods, per se.

Minor Essential Revisions

1. This sentence in the abstract is vague at first glance "The prevalence of carotid atheromatous plaques, CIMT, malnutrition scores and CRP were significantly lower in patients with significant VC...". It first seems that the word "prevalence" includes the plaques, CIMT and so on. You can change the place of "prevalence of carotid atheromatous plaques" and put it after CRP and write this sentence as the following:

"Mean CIMT, malnutrition scores, CRP level and prevalence of carotid atheromatous plaques were significantly lower in patients with significant VC..."

The same point for the same sentence in the results: "The prevalence of carotid artery atherosclerotic plaques (p=0.003), CIMT (right: p=0.006, left: p=0.001), MIS (p=0.007) and CRP were significantly higher in patients with significant VC compared to patients without significant VC."

It is better that you put the prevalence of carotid artery atherosclerotic plaques after CRP and also mention to the figures of CIMT, MIS and CRP for comparison between the 2 groups (not just the p values).

2. In Figure 1 please add the label "hemoglobin" to the Y axis.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
'I declare that I have no competing interests'